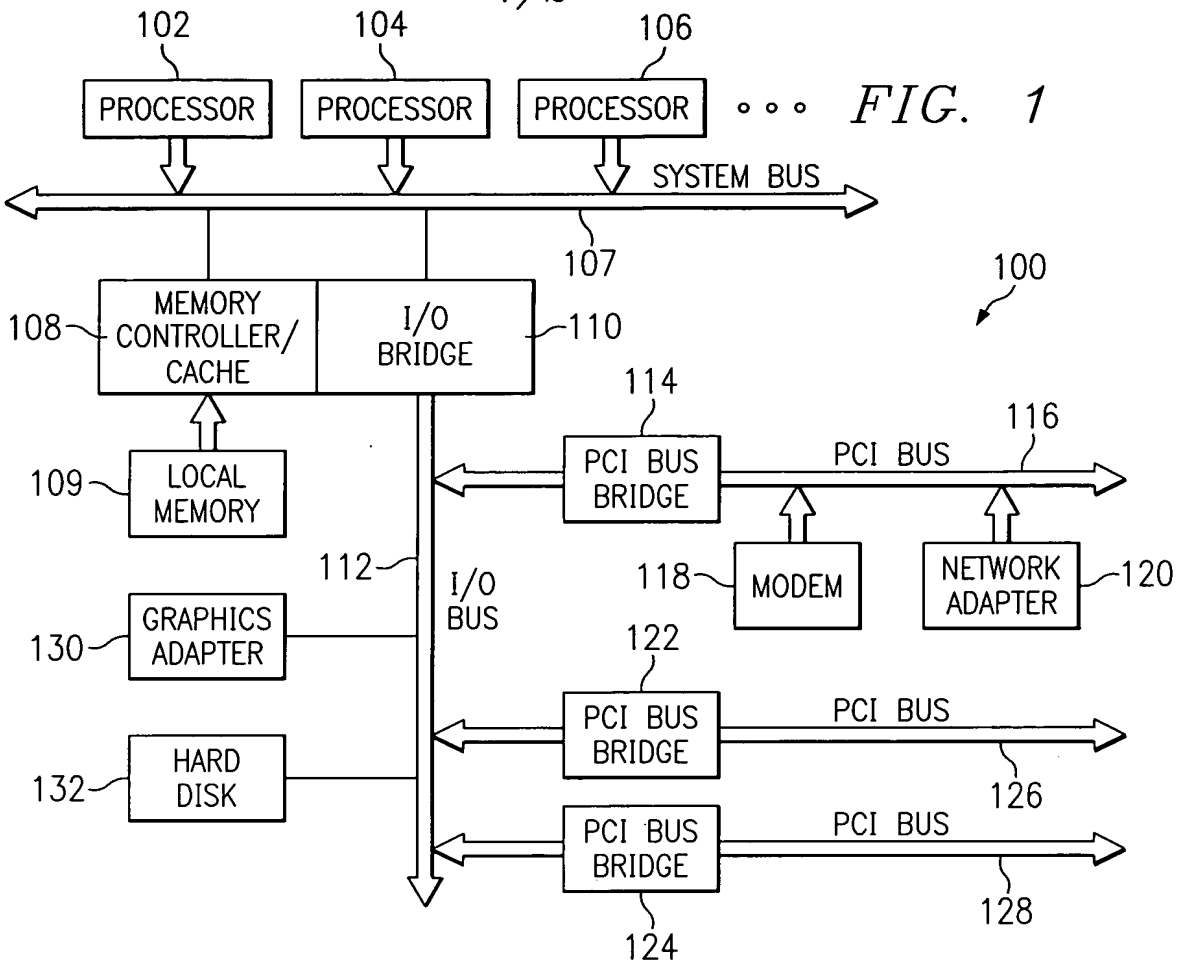

102
104
106
PROCESSOR
PROCESSOR
PROCESSOR
SYSTEM BUS
107
100
108
MEMORY CONTROLLER/ CACHE
I/O BRIDGE
110
114
116
109
LOCAL MEMORY
PCI BUS BRIDGE
PCI BUS
112
I/O BUS
118
MODEM
NETWORK ADAPTER
120
130
GRAPHICS ADAPTER
122
PCI BUS BRIDGE
PCI BUS
126
132
HARD DISK
PCI BUS BRIDGE
PCI BUS
128
124

FIG. 1

FIG. 3

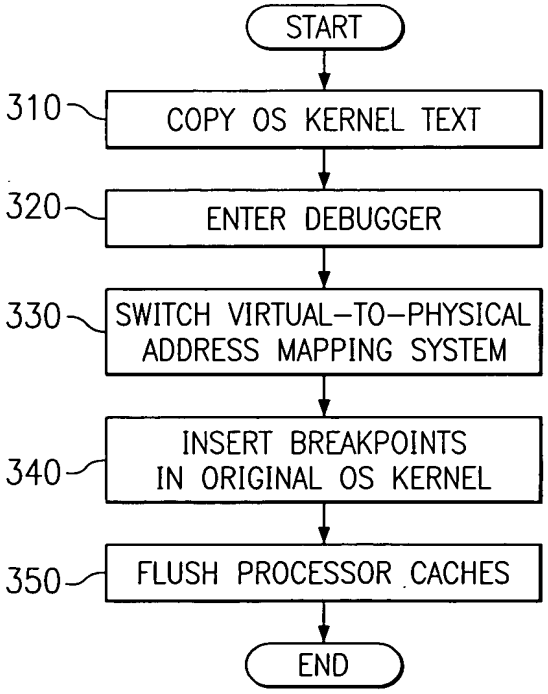
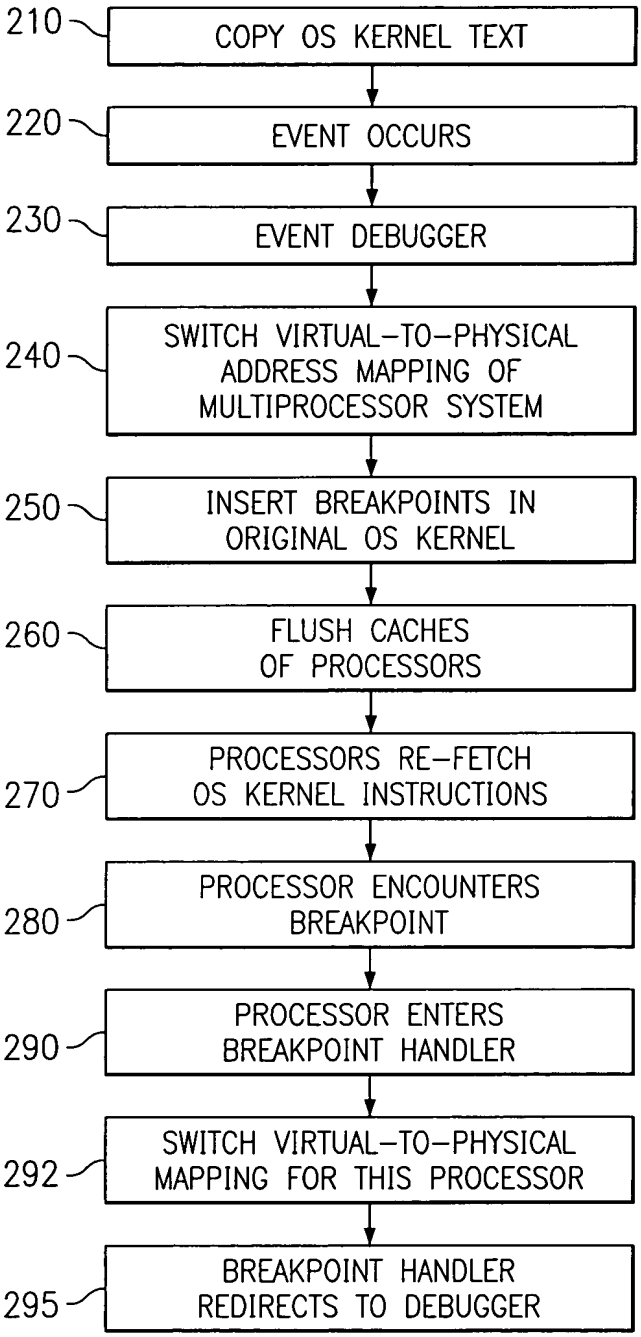

START
310
COPY OS KERNEL TEXT
320
ENTER DEBUGGER
330
SWITCH VIRTUAL-TO-PHYSICAL ADDRESS MAPPING SYSTEM
340
INSERT BREAKPOINTS IN ORIGINAL OS KERNEL
350
FLUSH PROCESSOR CACHES
END

FIG. 2


210
COPY OS KERNEL TEXT
220
EVENT OCCURS
230
EVENT DEBUGGER
240
SWITCH VIRTUAL-TO-PHYSICAL ADDRESS MAPPING OF MULTIPROCESSOR SYSTEM
250
INSERT BREAKPOINTS IN ORIGINAL OS KERNEL
260
FLUSH CACHES OF PROCESSORS
270
PROCESSORS RE-FETCH OS KERNEL INSTRUCTIONS
280
PROCESSOR ENCOUNTERS BREAKPOINT
290
PROCESSOR ENTERS BREAKPOINT HANDLER
292
SWITCH VIRTUAL-TO-PHYSICAL MAPPING FOR THIS PROCESSOR
295
BREAKPOINT HANDLER REDIRECTS TO DEBUGGER